	Application No.	Applicant(s)
Notice of Allowability	09/753,363	OBRADOVIC ET AL.
	Examiner	Art Unit
	Monplaisir G Hamilton	2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *8/23/04*.

2. ☒ The allowed claim(s) is/are *1-7 and 10-15*.

3. ☒ The drawings filed on *02 January 2001* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20041101* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

KIM VU

SUPERVISORY PATENT EX
TECHNOLOGY CENTER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Stephen Christian, Reg. No. 32,687, on 11/01/04.

The application has been amended as follows:

1. (Previously presented) In a system including spatial data for a spatial environment, wherein a recipe is used in the spatial environment, a method for mining the spatial data to optimize the recipe for one or more target values, the method comprising: an act of generating a data set from the spatial data using identified attributes selected by a user, the data set being varyingly complex based upon the identified attributes selected by the user;

an act of partitioning the spatial data into a training set and at least one modeling set wherein the act of partitioning is selected from the group consisting of: selecting the training set such that the training set comprises a substantially homogenous spatial relationship to the at least one modeling set, and selecting the training set such that the

training set comprises a substantially separate spatial relationship to the at least one

modeling set;

an act of inspecting the generated data set to provide statistical information for the data

set;

an act of preprocessing the data set to prepare the data set for modeling;

an act of modeling the preprocessed data set to describe relationships between the

attributes and the one or more target values; and

an act of providing recommendations such that the recipe is optimized.

2. (Original) A method as defined in claim 1, wherein the act of preprocessing the

data set further comprises:

an act of cleaning the generated data set;

an act of interpolating the generated data set;

an act of normalizing the generated data set; and

an act of generating new attributes.

3. (Original) A method as defined in claim 1, wherein the recipe is a fertilizer recipe

for use in an agricultural field.

4. (Original) A method as defined in claim 1, wherein a crop yield is included in the

one or more target values.

5. (Previously presented) A method as defined in claim 1, further wherein the

relationships include relationships between the training set and the at least one modeling

set, wherein the training set is' used to optimize a recipe for the at least one modeling set.

6. (Original) A computer program product having computer executable instructions

for executing the acts recited in claim 1.

7. (Previously presented) In a system including one or more spatial databases

corresponding to one or more spatial environments, a system for knowledge discovery

from the one or more spatial databases, the system comprising:

a user interface; and

a spatial data modeling and analysis module (SDAM module) for extracting knowledge

from the one or more spatial databases, the SDAM module comprising:

a data generation and manipulation module for loading a data set from the one or

more spatial databases based on designated attributes, wherein the attributes are selected

and supplied to the data generation and manipulation module by a user through the user

interface;

a data inspection module for providing spatial statistics on the loaded data set;

a data preprocessing module for preparing the loaded data set for modeling, wherein the

data preprocessing module removes errors from the loaded data set;

a data partitioning module for dividing the loaded data set into a training set and

at least one modeling set wherein the dividing is selected from the group consisting of:

dividing such that the training set comprises a substantially homogeneous spatial

relationship to the at least one modeling set, and dividing such that the training set

comprises a substantially separate spatial relationship to the at least one modeling set;

and

a modeling module for describing relationships between the attributes and one or

more target values, wherein the relationships are obtained from the training set and

applied to the at least one modeling set.

8. (Canceled)

9. (Canceled)

10. (Original) A system as defined in claim 7, wherein the SDAM module further

comprises an integration module for enhancing the knowledge generated from the one or

more spatial databases.

11. (Original) A system as defined in claim 7, wherein the preprocessing module

further comprises:

a cleaning and filtering module for removing duplicate data and removing noise from the

loaded data set;

a data interpolation module for computing common values for a common set of locations;

a data normalization module for transforming the loaded data set to a normal distribution

and for scaling the loaded data set to a range;

a data discretization module for use in modeling the loaded data set;

a generating new attributes module for combining existing attributes into a single

attribute;

a feature selection module for reducing the attributes identified by a user such that

irrelevant attributes may be removed; and

a feature extraction module for reducing a dimensionality of the loaded data set.

12. (Original) A system as defined in claim 7, further comprising a recommendation

module, wherein the recommendation module optimizes a recipe for a spatial

environment.

13. (Previously presented) A system as defined in claim 12, wherein the recommendation

module includes at least one of: a fertilization module for optimizing a fertilizer recipe to

be applied to an agricultural field; an irrigation module for optimizing a water recipe to

be applied to a field; and an equipment module for optimizing a recipe to be applied to

equipment.

14. (Previously presented) A system as defined in claim 13, wherein the recommendation

module includes at least one of: a pesticide module, a herbicide module, and a

seed-spacing module.

15. (Original) A system as defined in claim 7, wherein each of the data generation and manipulation module, the data inspection, the data preprocessing module, the data partitioning module, and the modeling module can be independently controlled by the user through the user interface.

16-22. (canceled)

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

The prior art does not, either singly or in combination, teach or suggest the limitation of Claims 1 and 7. Dependent Claims 2-6 and 10-15 are allowed because of their dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Monplaisir G Hamilton whose telephone number is (571) 272-

3852. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kim Y Vu can be reached on (571) 272-3859. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Monplaisir Hamilton

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